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ABSTRACT

Explored with a causal modeling approach were relationships among (1) student socioeconomic status (SES), (2) students', teachers', and principals' expectations for and attributed responsibility for students' learning, and (3) students' achievement. Participants were 76 principals, 250 teachers, and 5,289 third-grade students included in a sample of 76 public elementary schools in Louisiana. Specifically, four questions were investigated. The first asked if a causal relationship obtained among students' SES, expectations, attribution of responsibility for learning, and achievement. The second asked if a causal relationship obtained among students' SES, teachers' expectations, teachers' attribution of responsibility for learning, and students' achievement. The third asked if a causal relationship obtained among students' SES, principals' expectations, principals' attributions of responsibility for learning, and students' achievement. The fourth question asked if the strength of relationships varied depending on whether they were in the student, teacher, or principal model. The linear structural relations (LISREL) computer program was used for analysis of the data. Findings suggested that even though student SES was a strong predictor of achievement, variations existed in students', teachers', and principals' perceptions of expectations and attributions of responsilbility which affect student achievement. (Author/RH)

# STUDENT, TEACHER AND PRINCIPAL ACADEMIC EXPECTATIONS AND ATTRIBUTED RESPONSIBILITY AS PREDICTORS OF STUDENT ACHIEVEMENT

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# STUDENT, TEACHER AND PRINCIPAL EXPECTATIONS AND ATTRIBUTED RESPONSIBILITY AS PREDICTORS OF ACHIEVEMENT: A CAUSAL MODELING APPROACH


## ABSTRACT

The purpose of this study was to explore the relationships among student socioeconomic status, student, teacher and principal expectations and attributed responsibility for learning and achievement. A causal modeling approach was used.

Included in a sample of 76 public elementary schools in Louisiana were 76 principals, 250 teachers, and 5,289 third grade students. In the study, three theoretical models were developed and tested. The models explored the relationship between achievement and a combination of student socioeconomic status, expectations and attributed responsibility. The linear structural relations (LISREL) procedure was used for analysis of the data. Because the relationships among these variables were not clear from the literature, a series of models were tested.

All of the models included student socioeconomic status (SES) and student academic achievement. The student model included student expectations and

attributions of responsibility, while the teacher model included teacher expectations and attributions of responsibility. The principal model included principal expectations and attributions of responsibility. All three of the models specified that student SES influenced expectations which in turn influenced attributions of responsibility which in turn influenced achievement.

The LISREL computer program was applied to each of the three models. In all of the models student SES was the best single predictor of achievement. The effect of student SES on expectations was significant in all three models, but in the student model it was a negative predictor. Expectations were significant predictors of achievement in the student and principal models but not in the teacher models. Attribution of responsibility was a significant predictor of achievement only in the student model.

The study's findings suggested that even though student SES is a strong predictor of achievement, there are variations of student, teacher and principal perceptions of expectations and attributions of responsibility that do affect achievement. This determination may be useful in bringing about improvement in the effectiveness of schools.

# INTRODUCTION

Research findings about effective schools is one area of exceptional interest to educators and researchers. As Murphy and Hallinger pointed out (1985), policy analysis at the school level is becoming increasingly important. Early research on the effects of schooling found unequal academic achievement to be primarily a function of socioeconomic status. More recently, the major conclusion of effective schools research is that differences among schools do have an impact on student achievement (Madden, Lawson, and Sweet, 1976; Brookover and Lezotte, 1979; Rutter, 1979; Teddlie, C., Falkowski, C., Stringfield, S., Desselle, S., & Garvue, R., (1984). Research conducted primarily in urban elementary schools, identifies schools whose students' scores on standardized reading and math tests are better than would be expected given their family background (Purkey and Smith, 1982). Differences among schools that impact student achievement include differences in the leadership and in the climate of the schools. Student and teacher expectations are an often explored area of school climate. Glenn and McLean (1981), Rutter et al.

(1979), Brookover and Schneider (1975), and Brookover et al. (1979), all connect high expectations and high (or at least improved) student achievement. Good's (1981) explanation of the effects of teachers' expectations is that teachers often treat low achievers differently from high achievers. Related to this is teachers' emphasis on academic performance (Teddlie et al., 1984). High expectations seem to translate into a push by teachers for student improvement. The relationship between this push and school effectiveness has been noted by Weber (1971), McDill and Rigsby (1973), and Brookover et al. (1978).

Merton (1957) discusses the notions of self-fulfilling prophecy in terms of the Thomas Theorem. According to Merton, a self-fulfilling prophecy occurs when a false definition of the situation evokes a new behavior which makes the original false conception come true. Rosenthal (1974) proposed that high expectations for success lead to greater reinforcing behavior than average performance expectations and more criticism after failure. This increased reinforcement is one mechanism through which teachers' prophecies or expectations are fulfilled.

Attribution theory (Heider, 1958) predicts that tne more personally responsible an actor is held for an act, the greater the use of reinforcement feedback. Weiner et al. (1971) have proposed that an act must be seen by the reinforcing agent as caused by either the effort or ability of the actor if reinforcement is to occur. Weiner et al. (1976) also argue that stability of causal attributions is related to expectancy of success and expectancy shifts. Cooper and Baron (1977) have shown a relationship between academic expectations and attributed responsibility. Elementary teachers believed that students for whom high expectations were held, were more personally responsible for success than students for whom either average or low expectations were held.

## PURPOSE

The purpose of this study was to expolore the relationships among student socioeconomic status, student, teacher and principal expectations and attributions of responsibility and student achievement. To accomplish the purpose of this study, answers to the following questions were sought:

1. Is there a relationship among student expectations, SES, student attribution of responsibility for learning and student achievement?
2. Is there a relationship among teacher expectations, SES, teacher attribution of responsibility for learning and student achievement?
3. Is there a relationship among principal expectations, SES, principal responsibility for learning and student achievement?
4. Does the strength of the relationships vary depending on whether it is the student, teacher or principal variables that are being tested in the models.

## METHODOLOGY

Through the use of structural equation modeling, this study investigated the relationships between students, teacher and principal academic expectations and attributed responsibility, and student achievement. To answer the research questions, the following four

null hypotheses and six null subhypotheses were formulated:

Hypothesis 1. There will be no significant relationships among student SES, student expectations, student attribution of responsibility for learning and student achievement.

Hypothesis 2. There will be no significant relationships among student SES, teacher expectations, teacher attributions of responsibility for learning, and student achievement.

Hypothesis 3. There will be no significant relationships among student SES, principal expectations and principal attribution of responsibility for learning and achievement.

Hypothesis 4. There will be no variation in the strength of the relationships among variables depending on the model being used (students, teachers, or principals).

Subhypothesis 4.1. There will be no difference in the strength of the relationship between SES and student expectations and the strength of the relationship between student SES and teacher expectations.

Subhypothesis 4.2. There will be no difference in the strength of the relationship between student SES and student expectations and the strength of the relationship between student SES and principal expectations.

Subhypothesis 4.3. There will be no difference in the strength of the relationship between student expectations and student attributions of responsibility and the strength of the relationship between teacher expectations and teacher attributions of responsibility for learning.

Subhypothesis 4.4. There will be no difference in the strength of the relationship between student expectations and student attributions of responsibility and the strength of the relationships between principal expectations and principal attributions of responsibility for learning.

Subhypothesis 4.5. There will be no difference in the strength of the relationships between student attributions of responsibility for learning and student achievement and the strength of the relationship between teacher attributions of responsibility for learning and student achievement.

Subhypothesis 4.6. There will be no difference in the strength of the relationship between student attributions of responsibility for learning and student achievement and the strength of the relationship between principal attributions of responsibility and student achievement.

Through the use of structural equation modeling, this study investigated the relationships between students, teacher and principal academic expectations and attributed responsibility, and student achievement. Included in a sample of 76 public elementary schools in Louisiana were 76 principals, 250 teachers, and 5,829 third grade students. The study tested three theoretical models using student socioeconomic status (SES) and student, teacher and principal expectations and attributions of responsibility to predict achievement. The models, which were developed and tested in this study, explored the relationships between achievement and a combination of SES, expectations and attributed responsibility and postulate a causal chain relation among these variables.

The study employed the sophisticated structural equation modeling methods developed by Joreskog and his colleagues at the University of Uppsala in Sweden. Because the relationships among these variables are not clear from the literature, a series of models were tested. All of the models included student SES and student academic achievement. Model 1 includes student expectations and attribution of responsibility. Model 2 includes teacher expectations and teacher attributions of responsibility and Model 3 includes principal expectations and attributed responsibility. All three models (student, teacher, and principal) specify that SES influences expectations which in turn influence attributions of responsibility, which in turn influences achievement. This study compared the three models. Linear structural relations (LISREL) analysis was employed to examine each of the models (Joreskog and Sorbom, 1984). LISREL involves the mathematical analysis and breakdown of the covariances or correlations between variables into estimates of the strength of the relationships among constructs in a theoretical system. The LISREL model involves the use of two parts, the structural equation model and the

measurement model. The structural equation model describes the theoretical causal relationships among the variables by means of a set of general linear equations. A structural equation model for this study is depicted in Figure 1.

Figure 1

Structural Equation for the Student Models

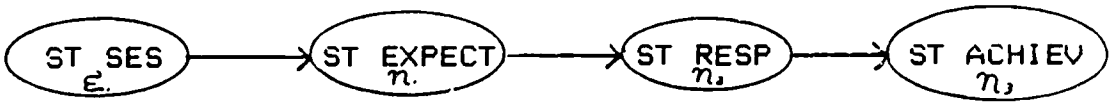
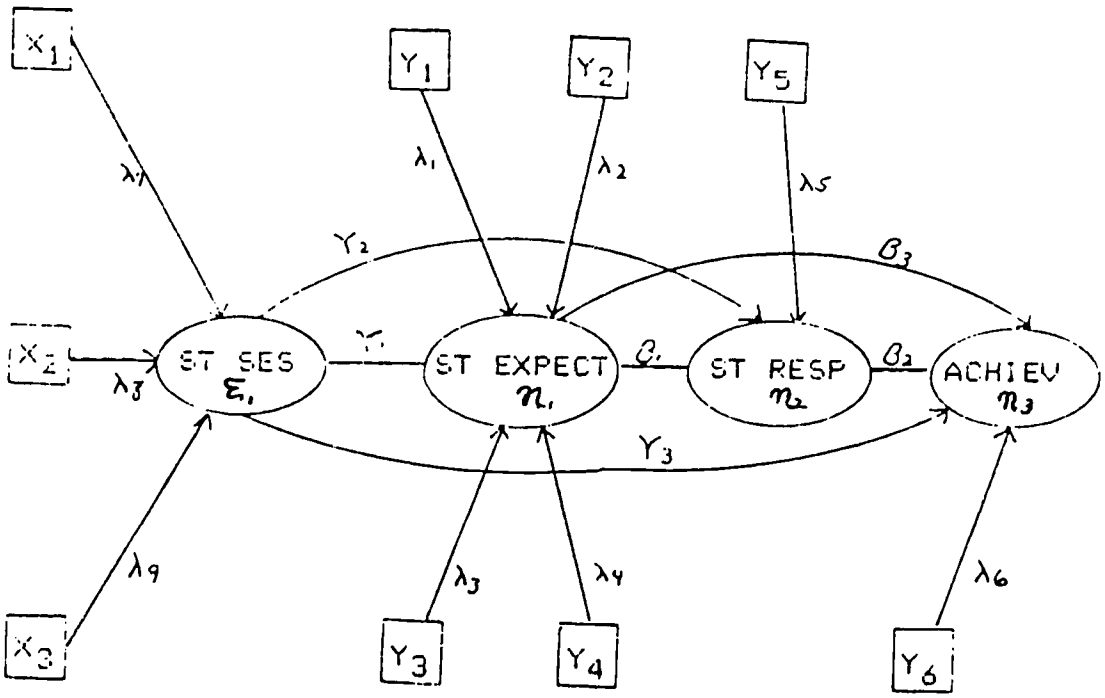



Figure 2 pictures the measurement model for the student models. The measurement model describes the combination of the observed indicator variables and allows evaluation of the measurement properties of such measures. In Figure 2, the observed variables such as X- and Y-variables are enclosed in squares. These variables are called "observed variables" because they are measurable. Latent variables such as $\xi$ - and $\eta$-variables are enclosed in ellipses. These latent variables are considered to be unobservable and thus cannot be measured directly. The exact nature of these variables can never be known first hand or be

quantified directly, therefore the relationships between these variables are estimated by observable measures. Figures 3 and 4 illustrate the measurement models for the teacher and principal models.

Figure 2

Measurement Model for the Student Models



In Figure 2, the arrows between two variables indicate a postulated direct influence of one variable on another. Coefficients are associated to each arrow as follows. Arrows from X-variables to E-variables are denoted $\lambda(x)$. Arrows from the Y- variables to $\eta$-variables are denoted $\lambda(y)$. Arrows from the $\eta$-variables to $\eta$-variables are denoted $\beta$. Arrows from the E-variable to $\eta$-variables are denoted $\gamma$.

Student SES is the independent variable in this model because no other variables are influencing it. Expectations, responsibility and achievement are all dependent variables because they are all preceded in the causal chain by other variables. The structural model includes only the latent variables while the measurement model includes the observable variables (X and Y variables) and the latent variables.

Figure 3

Measurement Model for the Teacher Models

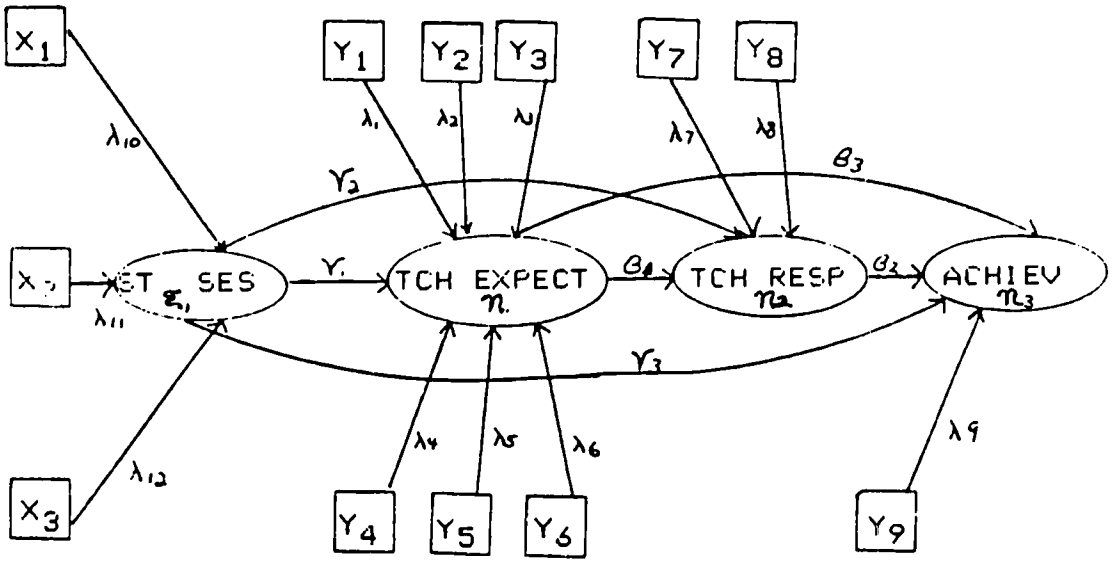
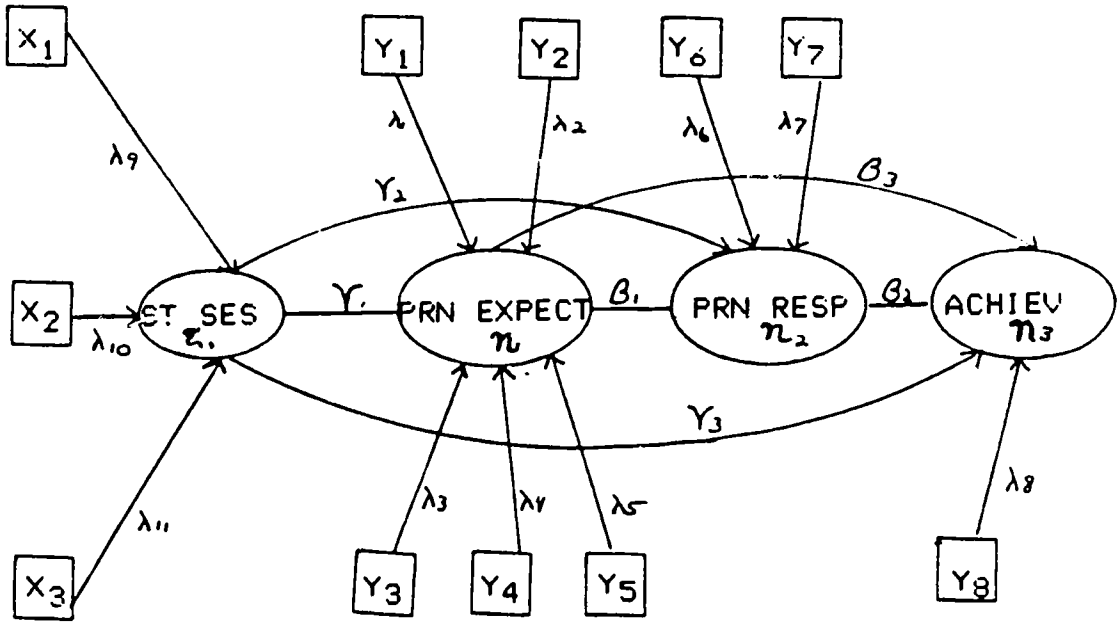


Figure 4

Measurement Model for the Principal Models



## Summary of Findings

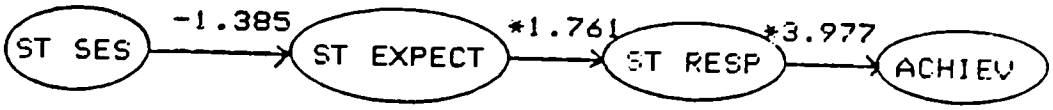
Four questions were investigated in the study. The first question asked if there was a causal relationship among student socioeconomic status, student expectations, student attribution of responsibility for learning and student achievement. The results of the LISREL analyses on the student models indicated that there were significant negative relationships between SES and student expectations in the majority of the runs on the student models. Three out of the five runs exhibited a significant negative relationship.

In all of the models where a path was tested between SES and student achievement, the relationship was very strong and significant. Four of the five models indicated that student expectations did not significantly affect student attribution of responsibility. Student attribution of responsibility was a significant predictor of achievement in all of the student models. Path coefficients for the student models are depicted in Figure 5.

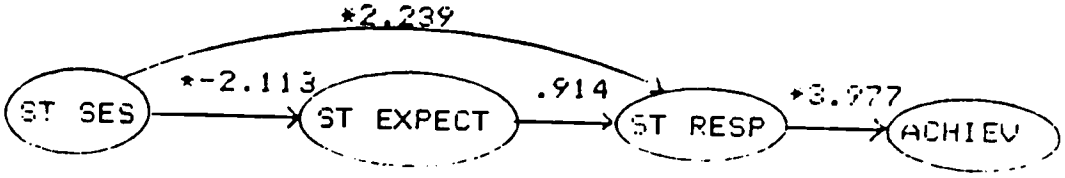
Figure 5

Path Coefficients for Student Models

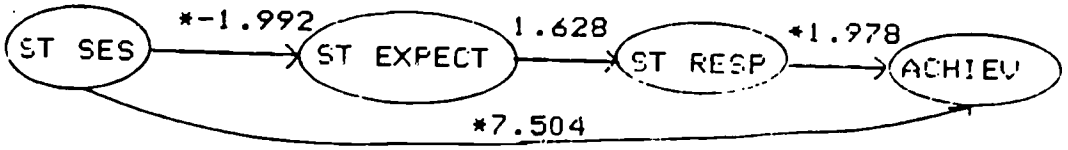
Student Model S1



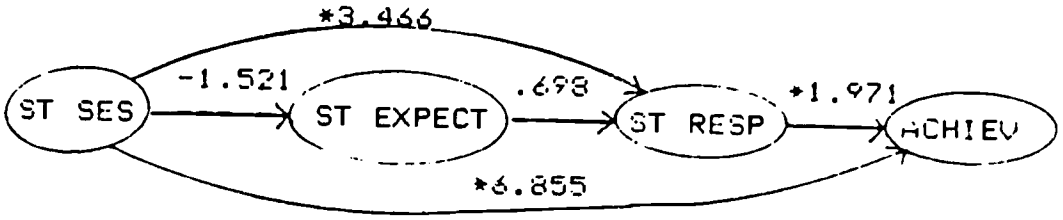

Student Model S2



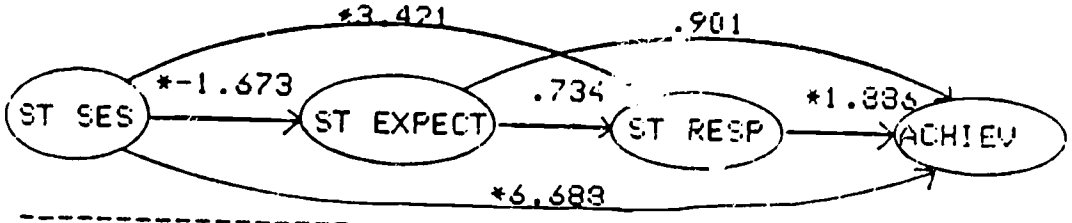

Student Model S3




Student Model S4




Student Model S5

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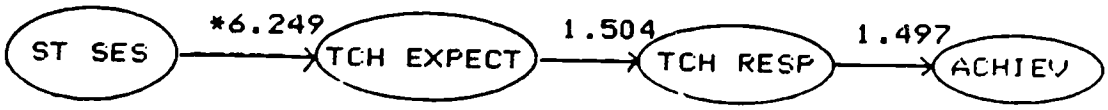
* P < .05. For all tests of significance the critical value for P < .05 = 1.645.

The second question asked if there was a causal relationship among student SES, teacher expectations, teacher attribution of responsibility for learning and student achievement. In the teacher models only two significant relationships were observed. The relationship between student SES and teacher expectations was positive and highly significant, as was the relationship between student SES and achievement. Teacher expectations were not significant predictors of teacher attributions of responsibility, nor was teacher attribution of responsibility a significant predictor of achievement. Path coefficients for the teacher models are depicted in figure 6.

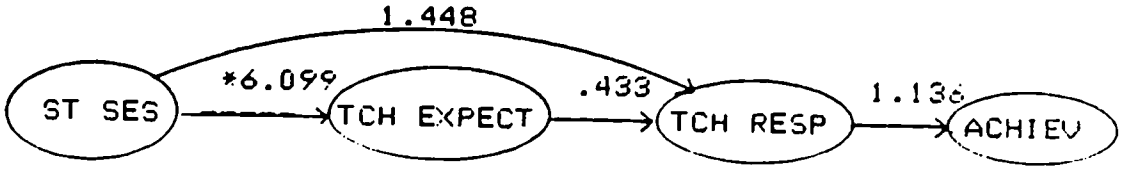
Figure 6

Path Coefficients for the Teacher Models

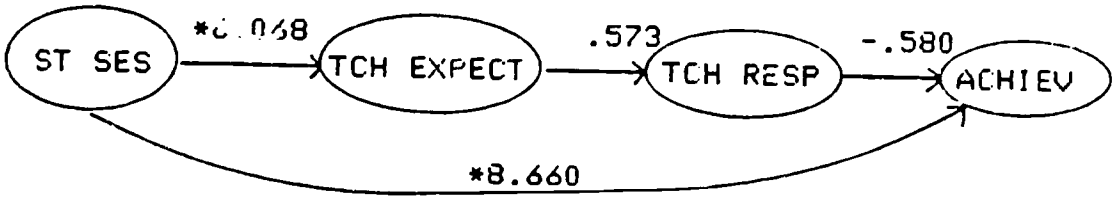
Teacher Model T1



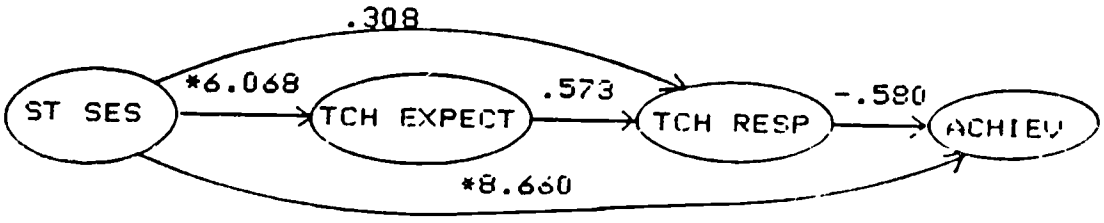

Teacher Model T2



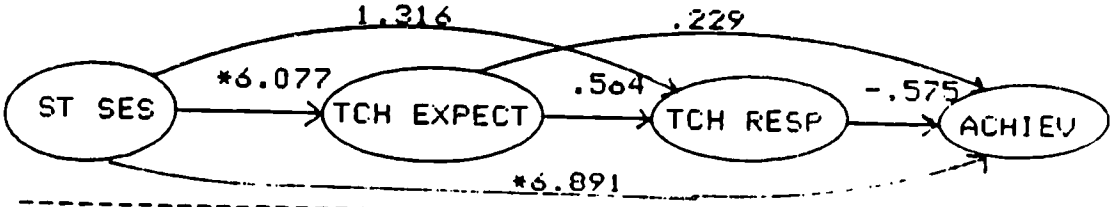

Teacher Model T3




Teacher Model T4




Teacher Model T5

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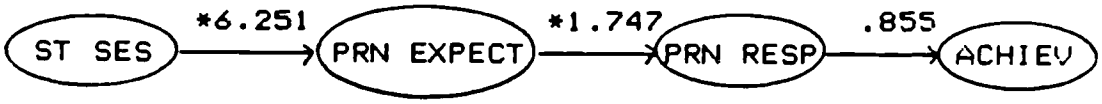
* P < .05. For all tests of significance the critical value for P < .05 = 1.645.

The third question asked if there was a relationship among student SES, principal expectations, principal attributions of responsibility for learning and student achievement. In the principal models, SES was a significant predictor of principal expectations as well as student achievement. Principal expectations significantly predicted principal responsibility, but responsibility did not significantly predict achievement. Path coefficients for the principal models are depicted in Figure 7.

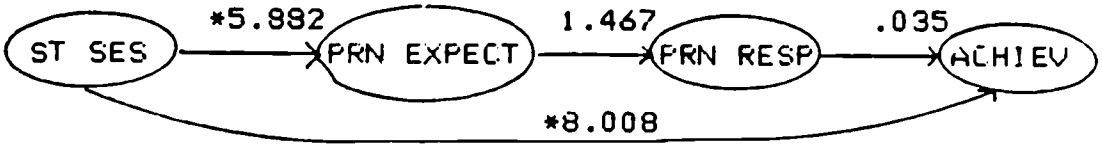
Figure 7

Path Coefficients for the Principal Models

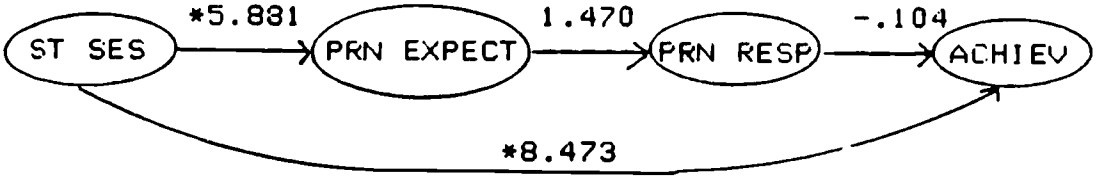
Principal Model P1



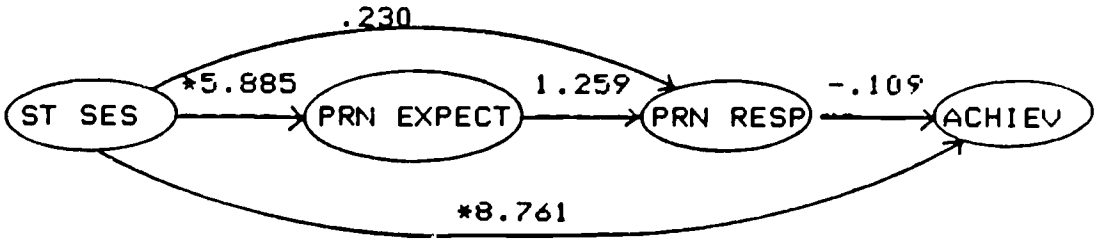

Principal Model P2



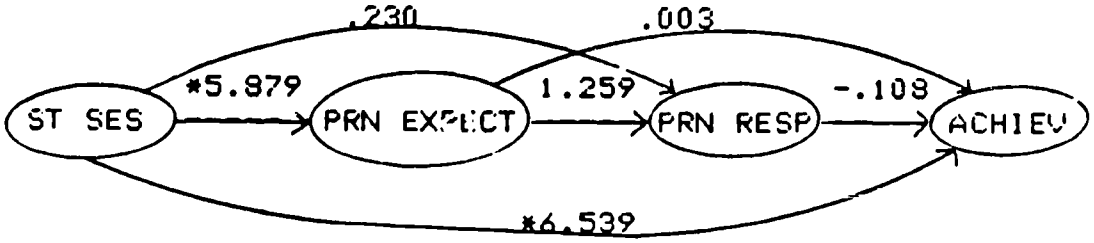

Principal Model P3




Principal Model P4




Principal Model P5

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* P < .05. For all tests of significance the critical value for P < .05 = 1.645.

The fourth and last question asked if the strength of the relationship varied depending on whether it was in the student, teacher or principal model. Results of the LISREL analyses indicated differences among the models in the relationship between SES and expectations. It was much stronger and positively significant in the teacher and principal models, while being less strong and negatively significant in the student models.

As was found in the Coleman et al. study (1966), student SES was by far the best single predictor of student achievement in all of the student, teacher and principal models. Looking beyond student SES and its direct link to achievement, there were three important findings. The effect of SES on expectations was the opposite of what would be expected in the student models. Only in the student models was SES a significant negative predictor of expectations. That is, the higher the socioeconomic status was, the lower the expectations were. Students at this age do not see the linkage between SES and achievement; thus, their expectations are not as strongly affected by SES. In

both the teacher models and the principal models the relationship between SES and expectations was strong and positively significant, as expected.

These data confirm Berube's (1984) conclusion that "the concept of social background is deeply embedded in the psyche of many teachers as an all too ready excuse for the academic failure of children who are poor" (p. 4). It could also help to explain why the variable, attribution of responsibility, in the teacher model was not a good predictor of achievement. If teachers feel that student SES is the the only important factor predicting achievement, then they will not feel that it is within their power to make a difference. That is, they will not "attribute the reponsibility for achievement" to themselves.

Why is it that SES appears to have the opposite effect on student expectations than it has on teacher and principal expectations? The school effectiveness literature often compares characteristics of low SES schools to high SES schools (Hallinger & Murphy, (1985) and Teddlie et al., 1984). In this study the researcher did not distinguish between high and low SES schools. It is possible that students in low SES

schools tend to compare themselves to each other at the grade level in a more positive manner than do the principals and teachers. Students at this age also do not see the linkage between SES and achievement, thus their expectations are not as strongly affected by SES.

In an attempt to explain this negative relationship between student SES and student expectations an appeal to the social-psychological literature was made. Students at this age tend to compare themselves to their peer group and family members. Third graders are not as apt to compare themselves to other classes of people as are adults or to be realistic about their capabilities. In fact, data from Louisiana School Effectiveness Study indicate that most third grade students expect to go to college (Teddlie et al., 1984). Jules Henry noted (in Spindler, 1969) "the emotions and attitudes of prepubertal children in our culture are not, on the whole directed toward generalized social goals, but focused on peer groups and family" (p. 192). Even the curriculum at this stage is developed in a manner that tends to sustain these attitudes and feelings so that ultimately they are reinforced.

A second major finding is that the relationship between expectations and attribution of responsibility was found to be significant only in the student and the principal models. In the teacher models the relationship between these two variables was not significant. It is possible that due to the strong linkage that exists between student SES and teacher expectations for the students, teachers feel that they have no responsibility in affecting scores. If they see student SES as the overwhelming factor related to achievement, they may feel helpless.

Why is it that there is a stronger linkage between principal expectations and attributions of responsibility? There were consistently larger relationships noted between principal expectations and responsibility than between teacher expectations and responsibility across all of the models. It may be that principals are able to see the student achievement from a different, more global perspective. Principals meet with other principals and view other schools where low SES student populations are scoring better on achievement tests than would be expected.

The principals are also likely to have less feeling of alienation than the teachers. They are able to affect change more readily and tend to be more reinforced for their attempts to change. Therefore, they have a greater sense of control over the situation and a more global view of the educational system.

The study provides evidence for determining which variations of student, teacher and principal characteristics can help to explain variations in student achievement.

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